

Docket No.: W1878.0234

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Yukihiro Kiuchi et al.

Application No.: 10/583,463

Confirmation No.: 2531

Filed: June 19, 2006

Art Unit: 4145

For: FLAME-RETARDANT THERMOPLASTIC
RESIN COMPOSITION

Examiner: O. S. Ojurongbe

DECLARATION

Yukihiro Kiuchi, Tsunenori Yanagisawa, Syukichi Tanaka, Makoto Soyama, Kazuhiko Inoue and Masatoshi Iji declare that:

1. We are the applicants in the above identified application.
2. The experimental work described in the above identified application was actually carried out by or for us and gave the results therein stated.
3. UL94 is a plastics flammability standard released by Underwriter Laboratories. The classifications relevant to this application from the lowest (least flame-retardant) to highest (most flame-retardant) are:

HB: slow burning on a horizontal specimen

V2: burning stops within 30 seconds on a vertical specimen with
drips of flaming particles allowed.

V1: burning stops within 30 seconds on a vertical specimen, no drips
allowed.

V0: burning stops within 10 seconds on a vertical specimen, no drips
allowed.

4. The data set forth in the above identified application shows that the UL rating of the inventive compositions containing 0.2% or less alkali metal was either V0 or V1 and the rating of the comparative compositions containing more than 0.2% and up to about 0.3% alkali metal was V2. All of the alkali metal containing flame-retardant additives in the examples of the cited Yamada et al. reference are rated either HB or V2. This indicates that all of the Yamada compositions contained more than 0.2% alkali metal.

5. Paragraph [0045] of Yamada indicates that the hydroxide compounds preferred as flame-retardants are preferably those having a purity of about 95.5% or more, and that the impurities can include sodium. It is indicated that the reason for the purity is the shelf stability improved relative to a lower purity, but there is no indication anywhere in this publication that the shelf stability continues to improve as the purity level becomes greater than 99.5%. It would therefore be expected that the shelf stability would be essentially the same whether the purity level was 99.5 or 99.7%. Because reducing the alkali metal content below 0.5% is both difficult and costly, and was not (prior to the present invention) believed to provide any significant benefits, the person skilled in this art would not have any reason to undertake the difficult and costly task of reducing the purity level significantly below 0.5%, and more particularly to 0.2% or less. The fact that a reduction to 0.2% or less provides the improvements verified in the working examples of the present application is unpredictable and is surprising and unexpected.

6. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated: December 12, 2008

Yukihiro Kiuchi

Yukihiro Kiuchi

Dated: December 12, 2008

Tsunenori Yanagisawa

Tsunenori Yanagisawa

Dated: December 12, 2008

Syukichi Tanaka

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